13.—South African Chironomidae (Diptera).—By Abbé J. J. Kieffer, Ph.D.

No representative of the Family Chironomidae was hitherto known from South Africa. This paper is therefore the first contribution to the knowledge of the Chironomid flies of this region. Owing to the interest displayed by the Director of the Cape Town Museum, Dr. L. Péringuey, in obtaining the species here described, one has a right to expect that other contributions will follow.

1. Sub-Family CLUNIONINAE, Kieff.

GEN. PARACLUNIO, Kieff.

This genus included one species only, viz., P. trilobatus, Kieff., whose larva lives amid the rocks on the shore of California. The two Cape species differ from the Californian by having the femora and tibiae free from scales, by the absence of fasciculate hairs on the tarsi, by the sublinear femora, and lastly by the shape of the anal segment.

Paraclunio fuscipennis, n. sp.

3 \(\). Black, opaque and glabrous. Halteres yellowish white, antennae brownish, apices whitish, legs whitish, under side of abdomen yellowish, forceps and oviduct brownish yellow. Eyes glabrous, subcircular, large, distant, the distance almost equal to their diameter, the median border with a longitudinal raised line. Palpi very short, consisting of 2 moderately large joints not quite as long as thick. Antennae similar in both sexes, 7-jointed, 1st joint elongated, longer by one-half than broad, and much thicker than the others following; the 2nd elongated, twice as long as broad, slightly narrowed towards the middle, subcylindrical, the 4 joints following slightly transverse, the apex strongly transverse, 7th larger than the 5 preceding it, but less thick than the scape, and 3 times as long as the 6th, ovoid except that the distal 3rd part is suddenly narrowed in the shape of a black, obtuse, subcylindrical style. All the joints

are finely pubescent, with the apex (neck) glabrous, the 6 joints of the flagellum have verticillate caducous setae, not longer than the thickness of a joint, the ultimate joint bears a similar seta at apex. Thorax hood-like, mesonotum with a greyish, pruinose stain on each side in front. Scutellum with long, vertical, and moderately dense setae. Wings glabrous, longer than the body, brownish black, neuration of Chironomus, cubitus reaching almost the alary point, the costal not projecting beyond it, the double nervule of the radius transverse, oblique, the discoidal prolonging the direction of its basal part and ending at the alar point, the bifurcation of the postical hardly proximal to the transversal, the 2 rami as in Chironomus; the auxiliary produced beyond the transversal, the second longitudinal indistinct. Legs long, hardly thick, the setae very short, much shorter than the thickness of the legs; femora widened, thong-like, anterior tibia longer by one-half than the metatarsus, all the tibiae without a pecten and crenulate ring; fore metatarsus twice as long as the 2nd joint; joints 2-4 slightly and gradually shortened, all of them weakly dilated at the distal end, the 4th cordiform, hardly twice as long as thick, 5th longer than the 4th on every leg, trilobate at apex; median lobe longest, rounded at tip, the other 2 lobes lateral, empodium long, almost as long as the hooks, ramose, the rami several times divided, all tarsal hooks slender and simple in the female, thick, black, and bilobate in the male, the outer lobe obtuse and very finely denticulate at apex, the inner lobe ending in a point. Abdomen weakly depressed in the male, basal joints of forceps long and thick, the terminal short, pubescent, club-like. Abdomen of the female more strongly depressed, the first 7 segments very transverse, 8th compressed, gradually attenuate into a point half the length of the 7th at its anterior part, but longer than the 7th, and ending in 2 long, straight juxtaposed laminae.

Length: 5 mm. Cape Town. Flits on the sea-shore in dark nights. (L. Péringuey.)

Paraclunio minor, n. sp.

3 \cong \cdot Brown, antennae and legs brownish yellow. Antennae shaped as in the preceding species, except that the 7th joint in both sexes is not narrowed in a slight stiletto point at apex, but is conical and concolorous; the verticillate setae have doubtless dropped, because I detected one only on the 2nd and another on the 7th. Wings less fuscous than in the preceding species. Fore tibia almost twice as long as the metatarsus, the latter a little longer than the 4 preceding taken together, 2nd equal to the 3rd and 4th also taken

together, these latter a little longer than thick and cordiform, hind tibiae almost treble the length of the metatarsus, 3rd and 4th joints hardly longer than thick. Anal segment of ? as long as the 2 preceding taken together, gradually thinned into a point curving upwards. Basal joints of the forceps thick and long, more than twice as long as the terminal which is pubescent with some more elongate setae and is widest in the centre. The other characters are similar to those of the preceding species.

Length: 3 mm. Cape Town. (L. Péringuey.)

2. Sub-Family CHIRONOMINAE, Kieff.

GEN. CAMPTOCLADIUS, v.d. Wulp.

Camptocladius natalensis, n. sp.

Joint of the lower ramus strongly arcuate. Legs almost glabrous, anterior tibiae twice as long as the metatarsus, 4th joint a little longer than the 5th, empodium as long as the hooks. Basal joint of the forceps thick, terminal joint slender, pubescent, slightly thinned at the distal end which is void of style, and is almost cylindrical and straight.

Length: 1.5 mm. Stellenbosch. (L. Péringuey.)

Camptocladius capensis, n. sp.

3. Totally black. Antennae 14-jointed, the apical joint once and a half as long as the 12 preceding ones united, 3-4 transverse, 11-13 as long as, or a little longer than thick. Wings punctate, without minute setae, costal not prolonged beyond the cubitus, which is a little more distant from the alar point than the upper ramus of the postical, bifurcation of the postical distal from the middle of the radius, lower ramus arcuate in its distal half. Legs with long hairs, anterior tarsi broken, empodium as long as the claws.

Length: 2.2 mm. Cape Town. (L. Péringuey.)

GEN. DICROTENDIPES.

Dicrotendipes pilosimanus, n. sp.

3 ?. The female is yellowish with the mesonotum, scutellum, and halteres pure white, 3 short bands on the mesonotum, the outer two acuminate behind and connected with a black dot, metanotum and mesosternum brownish vellow, legs vellowish, 5th joint of all tarsi, and in addition also the 4th tarsal joint, the end of the femur and tibia and of the 3 first tarsal joints brownish black, antennae whitish, the 6th joint brown. The colour of the male is similar to that of the female except that the abdomen is greenish in its anterior part with a spot or transverse band darker and covering the anterior half of the tergites, the apical half of the abdomen and the forceps are brownish, scape black, flagellum whitish, the white of the mesonotum 'a little pruinose, the scutellum greenish white. Palpi pale, long, consisting of 4 joints. Antennae of male 12-jointed, the last joint from 2½ to 3 times as long as the preceding 10 united, 3-11 very transverse, plume grev. Antennae of female 6-jointed, last joint nearly twice as long as the penultimate, 2-4 with long verticils, neck a little shorter than the nodose part. Wings white with subcircular deep dark stains, 1 on the transversal and the neighbouring part of the discoidal, 3 forming approximately an open arc, the inferior situated at the central part of the two rami of the postical vein, the median between the upper ramus and the discoidal; the geminate upper one is situated between the discoidal and the cubitus; lastly there are two spots between the stem of the postical and the inferior border of the wing, the one proximal the other distal, the 2 rami of both the postical and the discoidal are slightly bordered with fuscous, nervures pale. Fore metatarsus of the male longer by half than the tibia, its distal 3rd and the joints 2-4 with erect hairs and 5-6 times as long as the thickness of the joints, 1st joint more than twice as long as the 2nd, 4th double the length of the 5th, pulvilli large and broad as in Chironomus; in the female the fore metatarsus is longer by two-thirds than the tibia. Terminal joint of the forceps strongly arcuate, glabrous in its distal end which is gradually narrowed, apex provided on the median side with 8 seriate setae of short length but as long as the thickness of this part of the joint, lower appendix slender, pubescent, arcuate outwardly, reaching almost to the middle of the terminal joint, bifurcate a little beyond the middle, the proximal branch almost at right angles with the basal part, linear, glabrous, bearing 5 or 6 setae disposed in a median longitudinal line, distal branch a little wider, glabrous on the external border where it bears strong seriate setae.

Length: 3,6 mm.; ♀, 3.5-4 mm. Cape Town. (L. Péringuey.)

GEN. CHIRONOMUS, Meig. (TENDIPES, Meig).

The following is a synoptic table of the characters of the six species here described:—

- 2. Fore tarsus hairy, that is to say provided with long erect hairs. 3.
- 3. Hairs of the fore tarsus long and thick, tergites brown with 4 white dorsal spots tetraleucus, n. sp. Hairs of the fore tarsus long but not dense, tergites of a different colour. 4.
- Wings slightly smoky and iridescent, with numerous hyaline spots...iricolor, n. sp. Wings hyaline, without spots. 5.

Chironomus (Tendipes) tetraleucus, n. sp.

3 9. Whitish, palpi brown black, long, scape black, flagellum fulvous, 6th joint in the female brown black, mesonotum pruinose with 3 shortened fulvous bands, the lateral ones end behind in a large spot situated against the hind border, 1st abdominal segment yellowish, the following segments brown, all with 4 dorsal opaque white patches, the 2 smaller of which are set against the anterior border, the other 2 are behind, 1 on each side of the median line, they reach the hind border on segments 4 and 5, but they are confluent on the other segments, the whole of the 7th and 8th tergite is opaque white and pruinose, forceps vellowish; in the female the spots on the abdomen are less well defined. Frontal lobes distinct. Antennae 10-jointed in the male, the ultimate joint more than 4 times the whole of the preceding joints, 3-11 four times as thick as long, plume fulvous. Antennae in the female 6-jointed, the ultimate one more than twice as long as the antepenultimate, narrowed in the centre, 3-5 elliptical with the neck slightly longer than thick. Pronotum bilobate. Mesonotum glabrous. Scutellum with dense whitish hairs. Wings hyaline, transversal black, the bifurcation of the postical situated under the transversal. Fore metatarsus of the

male hardly longer than the tibia, its distal half and also the 3 following joints with dense brown hairs,* 5 or 6 times as long as the thickness of the tarsus, 2nd joint equal in length to half the 1st, 4th not twice the length of the 5th, pulvilli broad; in the 4 hind legs the tibia and the tarsus, but the femur much less, are provided with long, dense, erect hairs. Terminal joint of the forceps arcuate, the distal third part glabrous, suddenly thinned, the end provided on the median side with 5 or 6 setae as long as the thickness of that part of the joint, upper appendage not projecting beyond the basal joint, glabrous, pubescent on the inner side, elliptically enlarged in its distal middle and ending in a small hooked appendage, the widened part bearing 2 short setae, lower appendage almost linear, pubescent, narrow, reaching the distal 3rd part of the terminal joint, bearing in its terminal half very long, incurved hairs.

Length: \mathcal{J} , 11–12 mm.; \mathfrak{P} , 8–9 mm. Smithfield, O.F.S. (D. R. Kannemeyer.)

('mironomus (Tendipes) iricolor, n. sp.

3 ? Yellow, scape and flagellum fulyous in the male, yellowish in the female, except the 6th joint which is brownish black, 3 shortened bands on the mesonotum, metanotum and mesosternum rufescent, tergites 2-5 with a small brownish black spot, sometimes elongated, sublinear and situated on the anterior half, sometimes in the shape of a subcircular or oval patch; on the tergites 6-8 this patch is replaced by a large brown space not reaching the edges; in the female the abdomen is entirely brownish. Frontal lobes small. Antennae 12-jointed in the male, the last joint 4 times as long as the preceding 10 united and fusiform at tip, joints 3-11 three times as thick as long, plume fulvous. Antennae 6-jointed in the female, the 12th strongly narrowed in the centre, 3-5 elliptical with the neck a little longer than broad, 6 three times as long as 5, with fairly numerous arcuate setae, longer than the thickness of the joint. Thorax glabrous. Scutellum with long hairs. Wings weakly infuscate, iridescent, with numerous hyaline non-iridescent spots especially along the lower border and also on the alar base, the transverse nervure black. Fore metatarsus of male one-third longer than the tibia, its distal half and the 3 following joints with long hairs but not densely hairy as in the preceding species, 4th joint hardly twice as long as the 5th, pulvilli large, femur and tibia of the 4 hind legs slightly hirtose. Abdomen with long hairs. Terminal joint of the forceps strongly arcuate, suddenly narrowed and

^{*} This species differs in this characteristic from all its congeneric species.

glabrous, a little short of the distal middle, the apex bears on the median side 8 or 9 seriate setae, and is as long as thick, upper appendage very thin, almost straight, incurvate and pointed at apex, glabrous and projecting beyond the basal joint, lower appendage wide, rounded at apex, projecting beyond the middle of the terminal joint, pubescent, its distal 3rd with the usual long bent hairs, lamina with a long beak incurvate at tip.

In one of the males the colour of the mesonotum and of the scutellum turned from yellow to greenish, and the black bands of the tergites extended over two-thirds or three-fourths of the anterior part of the tergites.

Length: 3, 8-9 mm.; 2, 8 mm. Cape Town (L. Péringuey); Smithfield, O.F.S. (D. R. Kannemeyer).

Chironomus (Tendipes) caffrarius, n. sp.

3 ?. Greenish yellow or only yellowish, scape of male brownish black, flagellum brown; scape of female yellow, flagellum brownish black; mesonotum opaque, pruinose, with 3 shortened bands, metanotum and mesosternum pruinose brownish black, tergites of male brown on half or two-thirds of the anterior parts, the following portions nearly entirely brown; in the female all the upper part of abdomen is brownish; distal half of the metatarsus and the 4 joints following brownish black in all the tarsi. Palpi long, brownish black. Frontal lobes small. Antennae of male 12-jointed, the last one 3½ times as long as the 10 preceding taken together, 3-11 3 times as thick as long. Antennae of the female 6-jointed, the 2nd narrowed in the centre, 3-5 fusiform, 6 hardly double the size of 5. Wings hyaline, transversal black, bifurcation of the postical situated under the transversal. Anterior metatarsus of the male almost two-thirds longer than the tibia, the distal two-thirds, and the 3 following joints set with long hairs, joint 2 hardly longer than the half of 1, 2-4 gradually shortened, 4 nearly double the length of 5, pulvilli broad. Terminal joint of the forceps arcuate, glabrous and gradually thinned for a little more than the distal 3rd, median side of the apex with 6 seriate long setae, longer than the thickness of this part of the joint, upper appendix barely projecting beyond the basal joint, glabrous, wider at the middle, nearly straight, apical part thin and incurved, inferior appendage broad, rounded at end, reaching the middle of the terminal joint, pilose as usual, lamina with an obtuse beak.

Length: 7-8 mm. Cape Town. (L. Péringuey.)

CHIRONOMUS (TENDIPES) CAPENSIS, n. sp.

3 9. Yellowish white; antennae of male brown with the scape brownish black; antennae of the female yellowish, with joint 6 brownish black. Three short bands on the mesonotum and mesosternum ferruginous red, tergites 1-4 in the male brownish in the anterior parts, the following portions almost entirely brownish, the 2nd or 3rd last joint of the tarsi infuscate; in the female the upper part of the abdomen is brownish. Antennae of male 12-jointed, the last joint 3 times as thick as long, plume fulyous. Antennae of the female 6-jointed, 2nd narrowed in the centre, 3-5 with the neck as long as the nodose part, 6 double the length of 5. Mesonotum not pruinose. Fore metatarsus in the male longer by one-half than the tibia, but not half the length of joint 2, its distal two-thirds and the 3 following joints with long hairs, 4 not twice as long as 5, pulvilli broad; fore metatarsus in the female one-third longer than the tibia. Wings hyaline, transversal black, bifurcation of the postical situate under the transversal. Terminal joint of the forceps arcuate, glabrous for a little less than the distal half, which is gradually thinned and which bears on the median side of the apex 7 or 8 long seriate setae, longer than the thickness of the apex, upper appendage glabrous, straight, thin, almost linear, reaching to half the length of the terminal joint, straight and pilose as usual,

Length: 8 mm. Dunbrody. (Father J. O'Neil.)

Chironomus (Tendipes) lamprogaster, n. sp.

♂ ♀. Head brownish, palpi black, scape of male brownish rufous, shiny, flagellum brownish and opaque, scape and 2nd joint of the female yellow, 3-6 brownish black, halteres white, thorax whitish and shiny, 3 rufescent shortened bands on the mesonotum, metanotum and mesosternum dark brown, legs yellowish, anterior tarsus (except the basal half of the metatarsus), the basal 3rd and the apex of the anterior tibia, and the 2 ultimate joints of the 4 hind tarsi brownish black; abdomen shiny, that of the male light yellow with brownish black transverse bands occupying half or two-thirds of the tergites, the centre of these bands is a little prolonged backwards, nearly the whole of the tergites 6-8 and also the forceps brown; abdomen brown in the female with the hind border of the tergites yellowish. No frontal lobes. Palpi long. Antennae 14jointed in the male, the last one twice as long as the 12 preceding ones united, joints 3-12 a little transverse, plume brown. Antennae of the female 6-jointed, the 2nd joint narrowed in the centre, its neck not longer than broad, 3-5 subfusiform, the neck a little longer than thick, 6 two and a half times as long as 5, with a moderately long terminal seta. Wings hyaline, transversal pale, bifurcation of the postical distal from the transversal, basal lobe ending in an acute angle. Fore tarsus of male not hairy, very slender, the metatarsus longer by one-fourth than the tibia, nearly double the length of the 2nd joint, 4th double the length of the 5th, pulvilli moderately wide, reaching only to the median part of the hooks, empodium hardly reaching the hooks. Terminal joint of the forceps not arcuate, in the shape of an elongated ellipse, hairy all over, upper appendage glabrous, thin, arcuate, sharp, sublinear, rounded at tip, reaching almost to the middle of the terminal joint, pilose as usual, lamina ending in a gradually thinned point.

Length: 3, 5–6 mm. Cape Town, September, 1913. (L. Péringuey).

Chironomus (Tendipes) sensualis, n. sp.

3 9. Scape of the male reddish, flagellum pale, scape and flagellum of female reddish brown, thorax dark yellow or brown, mesonotum white, 3 shortened, fulvous bands opaque not pruinose; scutellum whitish, with long hairs; legs yellowish, end of joints 1-4 in the fore tarsus, and the whole of 5 infuscate; abdomen yellow, tergites 2-5 of the male with a transverse spot gradually narrowing laterally and occupying the anterior half, 6-8 brownish like the forceps; in the female the tergites 2-4 or 2-5 have the half of the anterior part brown. Frontal lobes very small. Antennae of male 12-jointed, the last joint 2½ times as long as the 10 preceding taken together, fusiform at tip, joints 3-11 a little transverse, plume fulvous. Antennae in the female 6-jointed, the ultimate joint longer by one-half than the penultimate, gradually thinned and remarkable for the long sensorial appendages, the latter thick and 4 or 5 times as long as the greatest thickness of the joint, joints 3-5 remarkable for their long neck which is slender and longer than the ellipsoidal nodosity, the 2nd joint is narrowed in the centre and the neck is twice as long as wide. Wings hyaline, transversal, brown, cubitus arcuate reaching almost the alar apex, bifurcation of the postical a little distal from the transversal. Anterior tarsus of male not hairy, very slender, the metatarsus at least half as long again as the tibia, 4th joint hardly longer than the 3rd; in the female the fore metatarsus is longer by one-half than the tibia, 4th joint distinctly longer than the third, more than twice as long as the 5th, pulvilli large, reaching the centre of the hooks. Terminal joints of the forceps arcuate, distal half glabrous and gradually thinned into

a beak, transparent, bearing at the apex on the median side 5 seriate setae, a little longer than thick, upper appendage thin, lower broad, straight, linear, not much longer than the upper, lamina with an obtuse point slightly expanding at tip.

Length: 6 mm. Cape Town. (R. M. Lightfoot.)

3. Sub-Family PELOPIINAE, Kieff.

GEN. PELOPIA, Meig.

Pelopia monilis, L., var.

?. Rufescent and opaque, antennae, halteres and legs white, a black ring at the distal end of the femora, two at the distal end of the tibiae, one at the distal end of the metatarsus, distal end of the tarsal joints also black, fore tarsus broken. Eves emarginate. very much narrowed above where they are separated by twice their terminal length; this narrowed part is a little longer than wide. Antennae 12-jointed, 3rd joint one-half longer than thick, 11th twice as long as thick, the vertical $2\frac{1}{2}$ times as long as the joint itself, 12 three times as long as 11, gradually narrowing to a point. Mesonotum with a trace of 3 rufous confluent bands. Wings hairy, white with a transverse black spot on the two transversals, 3 black spots situated at the end of the radius of the 2nd longitudinal and of the cubitus, numerous infuscate, indistinctly defined spots situated in a little more than the distal 3rd of the wing, some of these are between the postical and the lower border, these infuscate spots are small and elongated, cubitus not shorter than the costal.

Length: 3.5 mm. Cape Town. (L. Péringuey.)

4. Sub-Family CULICOIDINAE, Kieff.

GEN. SERROMYIA, Megerle.

SERROMYIA NOCTICOLOR, n. sp.

3. Brownish black, legs dark rufous, tarsi and halteres black. Antennae 14-jointed, the joints cylindrical, 3-11 sessile, gradually longer, the first ones hardly as long as thick, 11 twice as long as thick, the last 3 very long and sub-equal, each one double the length of 11, but, taken together, shorter than 2-10 united, 14 without style. Wings hyaline, cubitus reaching nearly the

last alar 3rd, almost adjoining the radius for more than its proximal half, then united with it at one point, and diverging thence, bifurcation of the discoidal proximal to the transversal, bifurcation of the postical situated under the transversal. Thorax convex, not hooded. Anterior femur with some weak spinules, anterior tibia more strongly spinulose, similar in this respect to the 4 hind ones, provided with a simple pecten, anterior metatarsus as long as the 2 following joints taken together, intermediate legs similar to the anterior except that the tibia has no pecten, in the posterior legs the femur is as long as the tibia and 3 or 4 times as thick, subcylindrical and with black numerous spinules, the tibia is as thick as the 4 anterior femora, with the spinules longer than its thickness and bearing a double pecten, metatarsus as long as half the tibia or the 3 following joints united, provided on the ventral side with short, thick, dense setae, 5th joint a little longer than the 4th, none of the tarsal joints cordiform, claws simple, without distinct empodium. Abdomen elongated, sublinear.

Length: 2.5 mm. Stellenbosch. (L. Péringuey.)

GEN. FORCIPOMYIA, Megerle.

FORCIPOMYIA INDECORA, n. sp.

3. Brown black, mouth, palpi, antennae, and legs yellow, halteres whitish, mouth acuminate, as long as the height of the head. Eves separated by a line. Second joint of palpi as long as the 3rd and 4th united, thickened at the proximal 3rd, 3rd longer than the 4th and little separated from it. Antennae 14-jointed with a very dense plume, joints 3-10 subglobular, a little transverse, 11-14 taken together as long as 2-10 united, 11 arcuate at base, then cylindrical, as long as 12 and 13 taken together. 12 longer than 13 by one-half, both cylindrical and having the base swollen and globular, 14 a little longer than 13, subcylindrical, 4 times as long as thick, ending in a style. Wings pointed. Cubitus not reaching the middle of the wing, soldered to the radius in its three proximal quarters, bifurcation of the discoidal hardly distal from the transversal, bifurcation of the postical plainly distal from the end of the cubitus. Legs with very long erect, sparse hairs, all the metatarsi a little shorter than the second tarsal joint, hooks very long and strongly falcate, empodium a little shorter than the claws, slender but with long hairs. Terminal joint of the forceps as long as the basal, slender, nearly straight, subcylindrical, a little thinned at the distal end.

Length: 3 mm. Stellenbosch. (L. Péringuey.)

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